Certificate of Analysis

Report Date: 23-Oct-2009
Order Date:15-Oct-2009

Client: **INTERA Engineering Ltd.**
Client PO: Project Description: 09-205

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Bromide	ND	0.1	mg/L	ND				20	
Chloride	200	1	mg/L	200			0.1	10	
Fluoride	ND	0.1	mg/L	ND				10	
Nitrate as N	ND	0.1	mg/L	ND				20	
Nitrite as N	ND	0.05	mg/L	ND				20	
Phosphate as P	ND	1	mg/L	ND				20	
Sulphate	89.2	1	mg/L	88.6			0.7	10	
General Inorganics									
Alkalinity, total	490	5	mg/L	491			0.2	2	
Ammonia as N	0.064	0.01	mg/L	0.066			4.1	8	
Chlorine, total	ND	0.01	mg/L	ND				13	
Conductivity	979	5	uS/cm	978			0.2	11	
pH	7.43	0.05	pH Units	7.50			0.9	10	
Phosphorus, total	ND	0.01	mg/L	ND				10	
Total Dissolved Solids	5010	20	mg/L	4800			4.3	10	
Total Suspended Solids	ND	2	mg/L	ND				10	
Total Kjeldahl Nitrogen	0.56	0.1	mg/L	0.57			1.9	10	
Turbidity	0.4	0.1	NTU	0.3			9.0	10	
Metals									
Aluminum	3.1	1	ug/L	3.7			19.1	27	
Antimony	ND	0.5	ug/L	ND				26	
Arsenic	ND	1	ug/L	ND				29	
Barium	146	5	ug/L	148			1.2	34	
Beryllium	ND	0.5	ug/L	ND				25	
Boron	ND	10.0	ug/L	ND				33	
Cadmium	ND	0.1	ug/L	ND				33	
Calcium	115000	10000	ug/L	117000			2.2	30	
Chromium	4.4	1	ug/L	4.6			4.9	32	
Cobalt	0.56	0.5	ug/L	0.55			1.4	32	
Copper	1.68	0.5	ug/L	2.00			17.0	32	
Iron	ND	100	ug/L	ND				32	
Lead	ND	0.1	ug/L	ND				32	
Magnesium	31400	20000	ug/L	32100			2.2	30	
Manganese	25.9	5	ug/L	25.8			0.5	29	
Molybdenum	ND	1	ug/L	ND				29	
Nickel	5.0	1	ug/L	4.8			2.9	29	
Potassium	2340	100	ug/L	2290			2.2	28	
Selenium	ND	1	ug/L	ND				28	
Silver	ND	0.1	ug/L	ND				28	
Sodium	50000	20000	ug/L	52100			4.1	27	
Strontium	303	10	ug/L	294			3.2	27	
Thallium	ND	0.1	ug/L	ND				27	
Tin	ND	5	ug/L	ND				27	
Titanium	ND	5	ug/L	ND				27	
Tungsten	ND	10	ug/L	ND				25	
Uranium	0.6	0.1	ug/L	0.6			6.0	27	
Vanadium	2.8	1	ug/L	3.0			5.2	27	
Zinc	11	10	ug/L	11			1.5	27	

Certificate of Analysis

Report Date: 23-Oct-2009
Order Date:15-Oct-2009

Client: **INTERA Engineering Ltd.**
Client PO: Project Description: 09-205

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Bromide	0.88	0.1	mg/L	ND	87.6	72-106			
Chloride	10.9	1	mg/L	ND	109	78-112			
Fluoride	0.97	0.1	mg/L	ND	97.4	73-113			
Nitrate as N	1.10	0.1	mg/L	ND	110	81-112			
Nitrite as N	0.992	0.05	mg/L	ND	99.2	76-107			
Phosphate as P	4.41	1	mg/L	ND	88.3	72-131			
Sulphate	10.3	1	mg/L	ND	103	75-111			
General Inorganics									
Ammonia as N	0.271	0.01	mg/L	ND	109	81-124			
Total Dissolved Solids	85.8	10	mg/L	ND	100	75-125			
Total Suspended Solids	24.0	2	mg/L	ND	100	75-125			
Total Kjeldahl Nitrogen	1.76	0.1	mg/L	ND	87.8	81-126			
Metals									
Aluminum	44.7		ug/L	ND	89.3	74-130			
Antimony	40.9		ug/L	ND	81.7	78-126			
Arsenic	46.2		ug/L	ND	92.5	83-119			
Barium	48.5		ug/L	ND	96.9	83-116			
Beryllium	47.4		ug/L	ND	94.9	72-132			
Boron	46		ug/L	ND	91.5	71-128			
Cadmium	46.9		ug/L	ND	93.8	78-119			
Calcium	1030		ug/L	ND	103	64-127			
Chromium	47.8		ug/L	ND	95.6	80-124			
Cobalt	47.9		ug/L	ND	95.9	78-125			
Copper	47.2		ug/L	ND	94.4	75-123			
Iron	826		ug/L	ND	82.6	66-119			
Lead	46.5		ug/L	ND	93.1	77-126			
Magnesium	823		ug/L	ND	82.3	75-131			
Manganese	47.9		ug/L	ND	95.7	79-123			
Molybdenum	47.2		ug/L	ND	94.4	82-119			
Nickel	47.5		ug/L	ND	95.0	78-119			
Potassium	1060		ug/L	ND	106	70-129			
Selenium	46.6		ug/L	ND	93.2	81-125			
Silver	46.2		ug/L	ND	92.4	70-128			
Sodium	826		ug/L	ND	82.6	67-132			
Strontium	47		ug/L	ND	93.5	88-114			
Thallium	47.3		ug/L	ND	94.5	82-127			
Tin	47.1		ug/L	ND	94.2	75-123			
Titanium	47.2		ug/L	ND	94.4	84-118			
Tungsten	47.3		ug/L	ND	94.5	70-130			
Uranium	47.0		ug/L	ND	94.0	70-131			
Vanadium	47.6		ug/L	ND	95.2	82-123			
Zinc	45		ug/L	ND	89.9	78-130			

Certificate of Analysis

Report Date: 23-Oct-2009
Order Date:15-Oct-2009

Client: **INTERA Engineering Ltd.**
Client PO: Project Description: 09-205

Sample and QC Qualifiers Notes

1- H-01 : Holding time had been exceeded upon sample receipt.
2- H-02 : This analysis was conducted after the accepted holding time had been exceeded.

Sample Data Revisions

None

Work Order Revisions/Comments:

None

Other Report Notes:

n/a: not applicable
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

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Certificate of Analysis

INTERA Engineering Ltd.
Suite 200, 1 Raymond St.
Ottawa, ON K1R 1A2
Attn: Sean Sterling

Phone: (613) 232-2525
Fax: (613) 232-7149

Client PO:
Project: 09-205
Custody: 59914/0941033

Report Date: 28-Oct-2009
Order Date: 26-Oct-2009
Order #: 0944002

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
0944002-01	SS1-E

Approved By: Mark Foto

Mark Foto, M.Sc. For Dale Robertson, BSc
Laboratory Director

PARACEL LABORATORIES LTD.

Order #: 0944002

Certificate of Analysis

Report Date: 28-Oct-2009
Order Date:26-Oct-2009

Client: **INTERA Engineering Ltd.**
Client PO: Project Description: 09-205

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Alkalinity, total	EPA 310.1 - Titration	27-Oct-09	27-Oct-09
Conductivity	EPA 120.1 - probe	27-Oct-09	27-Oct-09
pH	EPA 150.1 - pH probe	26-Oct-09	26-Oct-09
Solids, dissolved	EPA SM 2540C - gravimetric, filtration	27-Oct-09	27-Oct-09
Solids, total suspended	SM 2540D - Gravimetric	26-Oct-09	26-Oct-09

PARACEL LABORATORIES LTD.

Order #: 0944002

Certificate of Analysis

Report Date: 28-Oct-2009
Order Date:26-Oct-2009

Client: **INTERA Engineering Ltd.**
Client PO: Project Description: 09-205

	Client ID:	SS1-E	-	-	-
	Sample Date:	30-Sep-09	-	-	-
	Sample ID:	0944002-01	-	-	-
	MDL/Units	Water	-	-	-
General Inorganics					
Alkalinity, total	5 mg/L	285 [1]	-	-	-
Conductivity	5 uS/cm	787 [1]	-	-	-
pH	0.05 pH Units	7.10 [1]	-	-	-
Total Dissolved Solids	10 mg/L	489 [1]	-	-	-
Total Suspended Solids	2 mg/L	541 [1]	-	-	-

Certificate of Analysis

Report Date: 28-Oct-2009
Order Date:26-Oct-2009

Client: **INTERA Engineering Ltd.**
Client PO: Project Description: 09-205

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Alkalinity, total	ND	5	mg/L						
Conductivity	ND	5	uS/cm						
Total Dissolved Solids	ND	10	mg/L						
Total Suspended Solids	ND	2	mg/L						

Certificate of Analysis

Report Date: 28-Oct-2009
Order Date:26-Oct-2009

Client: **INTERA Engineering Ltd.**
Client PO: Project Description: 09-205

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Alkalinity, total	34.2	5	mg/L	34.0			0.6	2	
Conductivity	635	5	uS/cm	638			0.5	11	
pH	7.05	0.05	pH Units	7.10			0.7	10	
Total Dissolved Solids	860	10	mg/L	941			9.0	10	
Total Suspended Solids	20.0	2	mg/L	19.0			5.1	10	

Certificate of Analysis

Report Date: 28-Oct-2009
Order Date:26-Oct-2009

Client: **INTERA Engineering Ltd.**
Client PO: Project Description: 09-205

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Total Dissolved Solids	128	10	mg/L	ND	100	75-125			
Total Suspended Solids	26.4	2	mg/L	ND	100	75-125			

Certificate of Analysis

Report Date: 28-Oct-2009
Order Date:26-Oct-2009

Client: **INTERA Engineering Ltd.**
Client PO: Project Description: 09-205

Sample and QC Qualifiers Notes

1- H-01 : Holding time had been exceeded upon sample receipt.

Sample Data Revisions

None

Work Order Revisions/Comments:

None

Other Report Notes:

n/a: not applicable
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Donna Bloom

From: Sean N. Sterling [SSterling@intera.ca]
Sent: Friday, October 23, 2009 7:14 PM
To: Mark Foto
Cc: Samantha Murphy; Donna Bloom; Veronique Chenier
Subject: RE: 0941033 Project: 09-205

Mark,
Please go ahead and run for those parameters you feel are worthwhile. Standard TOT is fine.
Thanks,
Sean

-- Sent from my Palm Prē

Mark Foto wrote:

Hi Sean,

The hold time for sample SS1-e has been exceeded for all parameters. If you want to continue with the analyses we can certainly do it for you but the data would be qualified stating that the hold time has been exceeded. I would also not recommend doing the chlorine and the turbidity as these have a hold time of 2 days and will not be representative of the original sample. Let me know what you would like us to do with this sample (only SS1-e can be run as it was the only one submitted with an unpreserved bottle), as well as the expected turn-around time.

Thanks,

Mark Foto

Lab Manager, Environmental

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0944003
[illegible] Oct. 26.09
@ 7:20AM